

Call for Papers

Advances in portable sensing methodologies for urban environments: Understanding cities from a mobility perspective

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Special issue editors: **Amit Birenboim¹, Marco Helbich², Mei-Po Kwan³**

¹ Department of Geography and the Human Environment, Tel Aviv University

² Department of Human Geography and Spatial Planning, Utrecht University

³ Department of Geography and Geographic Information Science, University of Illinois at Urbana-Champaign

Recent years saw a surge in the development of lightweight and relatively cheap portable sensors of various kinds that can be carried by people or vehicles. The resulting continuous stream of fine grained data in space-time that these sensors generate brings new opportunities for understanding urban environments and urban living. In particular, these sensors allow capturing the behaviors and status of mobile humans and non-human objects in cities and their continuous interaction with physical, built, and social environments. The new type of sensor-based *in situ* information facilitates the development of new methodological approaches and analytical frameworks that can help address old and new urban issues.

Portable sensors include various types of devices that may record the behavior and status of the people or objects that carry them (e.g., intensity of activity, physical status) and characteristics of their surrounding environment (e.g., noise, temperature). While portable sensors are part of the data-intensive science paradigm and big data era, the technology and the data that it generates require special attention for at least the following reasons. First, in order to be useful for urban analytics, it is necessary to record the mobility patterns of moving agents along with other sensor information. Therefore, relevant data will rely on the integration of location tracking technologies such as GPS and RFID. Second, the collected information is of high temporal and spatial resolution. Consequently, a central advantage of the technology is that it allows the dynamic representations and analysis of urban environments and their inhabitants. Third, compared to stationary sensors, portable sensors tend to have lower data integrity. This is a limitation that needs to be addressed.

This special issue seeks to attract papers that examine the recent developments in the methodologies, analytical frameworks, and applications of state-of-the-art portable sensor technology in the context of urban research, management, and planning. It considers portable sensing in a broad sense, which includes both ‘classical’ passive sensing (i.e., opportunistic sensing) and more active sensing approaches that require input from users (i.e., participatory sensing). The special issue emphasizes the usage of these novel methodologies, analytical frameworks or applications to the understanding of the dynamism of cities and the mobile agents that comprise it. We encourage submissions

from a broad range of disciplines as long as they show clear relation to urban issues. Topics of interest include, but are not limited to:

- Implementation of emerging portable sensing technologies for studying mobile human and non-human objects in urban environments
- The use of portable sensor information in urban analytics and modeling
- Smartphone sensing techniques for a better understanding of cities and their inhabitants
- The usage of portable sensing techniques to the study of urban mobility and transportation
- The use of ambulatory sensing technologies in health and exposure research in cities
- Portable sensors and urban citizen science
- The relation between portable sensors and notions of smart cities
- Real-time city management (e.g., of transportations, mega events, disasters)

Submission procedure:

Interested authors should submit titles and 250-word abstract to Amit Birenboim (abirenboim@tauex.tau.ac.il) by April 22, 2019. Invitation to submit full manuscript will be sent to chosen abstracts by May 8, 2019. Deadline for submission of full length manuscript is January 13, 2020. Submissions must conform to CEUS submission guidelines and should be submitted through the journal's EVISE system. Manuscripts will undergo the standard CEUS review process.

Important dates:

April 22, 2019	Proposals (title and 250 words abstract) submission deadline
May 8, 2019	Invitation notification to submit full manuscript
January 13, 2020	Final manuscript submission deadline through the EVISE system
July 2020	Publication of special issue in CEUS

For more information please contact one of the special issue editors:

Amit Birenboim (abirenboim@tauex.tau.ac.il)

Marco Helbich (M.Helbich@uu.nl)

Mei-Po Kwan (mpk654@gmail.com)